

**CLAIMS**

1. Process to extract phenolic compounds from a crude residual plant material using a hydrothermal treatment,  
5 characterized in that it places said crude residual plant material in contact with hot water in a closed reactor, at a temperature between 180°C and 240°C, and a pressure so that the water is maintained in liquid phase.
- 10 2. Process according to claim 1, characterized in that said crude residual plant material is selected from the residues of the olive oil production process, such as pits, kernel shells, alpeorujo and mixtures thereof.
- 15 3. Process according to claim 1, characterized in that said reactor is an autoclave-type stirred reactor.
4. Process according to any of claims 1, 2. or 3, characterized in that it comprises the steps of:  
20 a) adding the crude residual plant material to the reactor and adjusting the solid/liquid ratio in the reactor with water, so that it ranges from 1/5 to 1/15 (w/v);  
b) stirring;  
25 c) heating to a temperature between 180 and 240°C, and at a pressure so that the water is maintained in liquid phase;  
d) constantly stirring the mixture for a time period between 4 and 30 minutes; and  
30 e) cooling the reactor to approximately 40°C, unloading the mixture, filtering and recovering the liquid fraction.
5. Process according to claim 4, characterized in that  
35 the tyrosol and hydroxytyrosol content is determined by

standard HPLC techniques.